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CHEMISTRY DIVISION
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AMERICAN DYESTUFF REPORTER

Vol. VII, No. 19
Nov. 8, 1920

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs Are Used"

In Two Sections—Section One

Vol. 7 New York, November 8, 1920 No. 19

A MODEST DISCLAIMER

We Were All Wrong, It Seems, About Germany, for Dr. Carl Duisberg Now Says She Did Not Consider the Dye Industry in the Light of an Asset When She Entered the War

YOU will probably become more or less tired of hearing us and others talk about the Senate and the Dye bill between now and December 6; indeed, it will be a great relief for all hands when it is at last realized that we shall have to listen to no more arguments for and against the licensing system of protection, and a still greater relief when it is realized that the reason for the disappearance of the subject from our trade journals arises from the licensing plan having become a reality in this country. But take warning; business is business, and as long as this matter remains the most important business which the industry has on hand, one must expect to see it continuously agitated. To speed it up must be our principal concern, and as the most critical period of the Dye bill's progress draws near there can be no letting down. All, we hope, will agree that its vital importance as a topic cannot well be exaggerated, but if these is any erring to be done, either in treating of it or thinking about it, let it be on the side of overzealousness. Soon it will be out of the way and happily settled.

All have had a long rest, along with the Senate, and it is high time for a little intensive campaigning once more. The Senate, judging from past action, doubtless feels that if it *never* hears of the proposed measure again, that will be too soon; hence, if the Senate can stand it for a while longer, belike the rest of us can.

This is both a threat and a warning.

However, since there is quite enough said about it for one week in both this and the Monthly Technical Section, we propose to introduce here for your diversion and possible instruction an interesting statement or two about the German coal-tar chemical industries and their part in the World War. The worthy and venerable *Manchester Guardian* was responsible for opening up the subject when it quoted some remarks from Dr. Carl Duisberg.

Dr. Duisberg, managing director of Farbenfabriken vorm. F. Bayer & Co., lifted up his voice, it seems, at a meet-

ing of the Society for the Protection of the Interests of the German Chemical Industry (that's the name of the society) at Munich, to declare that the idea generally held in Entente countries that the German dyestuff manufacturers made all necessary preparations before the war to enable them to turn to the manufacture of explosives immediately hostilities began, is quite incorrect. None of the companies, asserted the Doctor, made any explosives whatever until the shortage became acute, and the conversion of the plants to war work took several months and was very costly.

Now, **says the newspaper** printing these utterances, ""The statement seems probable enough, though it hardly hits the mark.* Neither the Germans nor anyone else imagined at the outbreak of the war that explosives would be used to the extent they were, but somebody would know where they could turn for them if necessary, and it was thought—perhaps erroneously—that the chemical industry was specially fostered because of the help it could give. The feeling that was uppermost, however, was not what the Germans had done but what it was necessary this country should do in order to protect itself in the future."

Dr. Duisberg said further that the German dyestuff industry had been developed entirely on economic lines, and that if other countries are to succeed in this branch of applied chemistry they will have to work on sound economic lines also. "The complete utilization of by-products," he continued, "is of great importance. Germany is likely to suffer for some time from the shortage of domestic supplies of tar-distillation products, owing to the coal shortage, and the arrangements made at Spa will probably make the present unsatisfactory position worse."

He added that he did not think, however, that German chemists need be seriously alarmed at the growth of foreign competition.

On seeing all this, a correspondent of the British newspaper was moved to write as follows:

"Dr. Duisberg is concerned to state that the German factories were not mobilized before the war and that they did not make any preparation before the war to enable them to turn to the manufacture of explosives immediately hostilities began. No person in close touch with chemical warware in this country has ever made such a statement. We knew perfectly well that the Germans did not go to war until they had, as they thought, accumulated a sufficient big stock of shells and high explosives to win the war.

"But after the Battle of the Marne there was a munition crisis in Germany. The huge stocks of shells and high explosives petered out before the gates of Paris.

"What did they do? Ludendorf, the chief of the German General Staff, tells us that he sent for two men to come to his assistance, one of whom was Dr. Duisberg, head of the I. G., the Interessen Gemeinschaft, the great combine of the German aniline dye manufacturers. From that time on there was a very close connection between the German General Staff and the German I. G., with the result that Germany was, in spite of our blockade, able to keep the field of the Battle of the Marne until November, 1918."

Whereupon the *Guardian*, apparently in the role of referee, further adds that it was not known until after the war, although it may have been suspected, that it was partly through lack of munitions that the Germans were defeated at the Marne. They had previously thought little of what chemists could do, and even when they began to employ them they did not at first attach great importance to their work. Up to the time of the Battle of the Marne the chemists had been mobilized like other people, but

*Can this be intended for a humorous reference to the second collapse of German exchange values?

after that they were sent back to the works to produce poison gases—first, chlorine, which was easily met by the provision of masks, and, second, mustard gas, which it was essential should be made on a large scale to be really effective. The German High Command failed to grasp that fact at the critical time; and although they made great use of the dye plants eventually, they failed to do so until the Allies were ready to meet them with their own weapons. That, in brief, is the history of the chemical side of the war.

For our own part, we are quite willing to agree with Dr. Duisberg that the German dyestuff industry was developed entirely on economic lines, and with the *Guardian* and its correspondent in the belief that the members of the German General Staff were not alive to the possibilities of poison gas as a weapon when war was declared, and even that the Germans may have painfully underestimated the quantity of explosives they would require to carry on the war. Indeed, when they started the great advance *"nach Paris,"* they had scheduled themselves to arrive within a very few days and it is not unreasonable to suppose they fancied that as a result of a bold, decisive stroke the war would end in a brilliant victory inside of two or three months, and that consequently a supply of explosives to cover that period of time would be ample.

It is certain, however, that Germany set great military store by the efficiency of her chemical industries and that she banked heavily upon her manifest superiority in this respect over her opponents, and it seems equally certain that, considering England's ability to shut off her supply of Chilean nitrates at will, she would never have dared enter upon such an enterprise without first considering her chemical industries thoroughly from a military standpoint and making certain that no detail in a program of complete independence from all sources outside her own borders was missing.

Viewed in this light, Dr. Duisberg's implication that the Germans had no thought of anything but commerce when the dye industry attained its full growth appears, on the face of it, like an unintentional strain on the world's credulity. It may be that the dye industry "arrived" in the German consciousness before the thought of war did, but our guess is that had it not been for the presence of the dye industry Germany would not now be worrying about reparations coal, cash and colors, and that such an asset as the now crystallizing Allied Dye & Chemical Corporation would not have been dreamed of.

And as for his statement that German chemists need not fear foreign competition, the best way to make him right, so far as the United States is concerned, is to dally with the Dye bill a year or so longer.

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WEIGHTING AND DYEING OF SKEIN SILK

By Dr. Jules Monnet

The dyeing of skein silk is the most important branch of the silk industry. Unless skein silk is carefully and properly handled at every stage, the final result, judged by the quality of the fabrics woven from it, will not measure up to the best standards. Broadly, skein silk is classed as hard silk or "ecru"—that is, silk in the raw—also as soft or partially degummed silk, known as souples; and, lastly, boiled-off or completely degummed silk, known as "cuite" silk. Raw and souples are employed to a much less extent than boiled-off silk.

The preparation of silk is important; ecru silk is raw silk that has been merely washed in water previous to weighting and dyeing. It is apparent, therefore, that but little, if any, of the natural incrusting substances upon the fiber have been removed. On the other hand, souples have been softened, not only in water but with the addition of some soap. The result is that some of the sericin is removed. The loss in weight of ecru silk is very little, but in the process of soupling the loss in weight may be as much as 10 per cent. Owing to degumming, however, the loss may equal 20 to 24 per cent or more, according to the quality of the silk and its origin.

Soupling is carried out in various ways, according to the ideas of the dyer. It may be done with sulphurous acid, hydrochloric acid, tartaric acid, etc., all of which, however, leave the silk with a semi-lustrous or dull appearance. This is due to the partial removal of the gum. Such partially degummed silk is in nowise comparable to boiled-off silk.

To prepare skein silk properly for dyeing it is absolutely necessary to insure the complete removal of all gum from the fibers. If this is not thoroughly done the result will be unevenness in the finished dyeings, showing up as patches or streaks in the skeins, and this unevenness is of such a nature that it cannot be corrected by any subsequent treatment short of redyeing with a much heavier shade than originally intended.

To properly boil off silk requires a certain period of time for the soap used to dissolve the sericin, and any attempt to shorten the time almost invariably results in defective work. While the writer recognizes and appreciates the various modifications of the degumming process, both chemical and mechanical, the following details of the process apply to the operations as generally carried out in throwing establishments.

Where the degumming process has been carried on uniformly, and the washings have been thorough, uneven skeins will be the exception, but where the soap treatments have not been given sufficient time to soften the gum, and where the treatment in the second soap bath has not been long enough to dissolve it completely, it is not to be expected that the subsequent washings with water will remove the last traces of gum that the soap failed to dislodge.

Boiling off calls for a high order of judgment on the part of the foreman, for no rule or recipe can take the place of combined experience and judgment. Silks of different origin require sometimes slight, oftentimes radical, departures from the usual operations, and consequently no hard-and-fast rule can be given.

Usually two soap baths are required; each bath should contain 30 gallons of water for each 10 pounds of silk. This volume of bath permits suitable freedom for the silk, but if the volume of the bath is restricted proper circulation of the boiling-off liquors is not possible.

Degumming a bath of 100 pounds of raw silk requires that the first bath be made up with about 20 to 25 pounds of silk soap. Raise the temperature to 200 deg. Fahr., immerse the skeins, which have been tied up in bags, and keep them suspended in the bath for about two or three hours. During this period of immersion the strong soap bath has caused the sericin on the silk to swell and become jelly-like in con-

sistency, in which condition it is ready for treatment in the second bath. This bath should be charged with 300 gallons of water, together with 10 to 12 pounds of soap, and heated to 200 deg. Fahr. Immerse and slowly raise and lower the silk from two to two and one-half hours. This usually effects the removal of nearly all the gum from the silk. The movement of the bags containing the silk is necessary to insure the circulation of the liquor through the mass of silk, and without this circulation the work will not be properly done.

Sometimes a further treatment in a third bath is given. This bath is made up practically like the second bath, and has for its object the final "stripping" or complete removal of the last traces of silk gum.

After passing through the soap treatments, the silk is finally washed and rinsed in a sufficient number of changes of water to remove not only the soap liquor but the dissolved gum. It is needless to observe that the water used in washing and rinsing must be as soft as it is possible to get it, and likewise free from suspended matter. It is gratifying to note the change of opinion that has gradually gained in the silk industry in this country during recent years in regard to the adoption of water-softening appliances. Without discussing the merits of the various water-purifying processes now on the market, all of which are good when properly used, it is noteworthy that almost every type is made use of somewhere in the silk industry.

Water containing lime is detrimental in the treatment of silk, because primarily lime water causes an insoluble deposit of lime soap to form on the fiber, and this, when in appreciable quantities, detracts from the luster of the silk. When such lime soaps form on the silk fiber they cannot be removed by any process without further injury to the silk.

Regarding the weighting process, with good, clean silk the operation of "dynamiting" can proceed without fear of trouble developing. If the silk is not clean and free from all traces of gum or soap, defects will arise that cannot be remedied. This is the substance most commonly employed for weighting. Formerly, for white and colors, besides tin, other substances, including various tannins, sugar of lead, etc., were used; in time tin has replaced them all. For blacks, iron is the chief agent, including tin, that is most employed, since it aids materially in developing the black with logwood.

The tin compound used for weighting is known as stanic chloride, and appears in the trade, either in the form of crystals or as a solution. In the early days of tin weighting the composition of this solution, called "dynamite," was held as a great secret and jealously guarded. It is now produced on a large scale by manufacturing chemists in a degree of purity and uni-

(*Continued on page* 12.)

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In Two Sections—Section One
Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

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DO IT!

Remember this: A letter from every member of the dye-making and dye-consuming fraternities requesting the passage as soon as convenient of the Dye bill containing the licensing provision for the protection and building up of a strong, self-contained American dye industry, would practically assure favorable and prompt action on that measure when the Sixty-sixth Congress assembles for its third session on December 6. All that is necessary is to address a short paragraph, on your business stationery, to Senator James E. Watson, Senate Office Building, Washington, D. C.

The only way to get anything nowadays is to organize and go after it—hard! Don't rest content with having one letter go out from each concern, but see to it that every executive and every individual you can interview sends his. If practicable, have your letter duplicated for every employee to sign. There is a world of potency in overwhelming numbers; their power over legislative bodies is well known. Make it your business to see that your friends in other concerns inaugurate a similar campaign. But, first of all, be sure you write your own letter.

BRAVO, T. W. J.!

In a recent issue our neighbor, the *Textile World Journal*, points out that one of the arguments advanced from time to time by opponents of legislation restricting the importation of dyestuffs is the claim that prohibition of dye imports would place American manufacturers of textiles at a disadvantage in the face of competition from foreign-made cloths dyed with foreign colors. From recent press items, it appears that this argument is to be one of the principal weapons to be used by the opposition in the struggle for protective legislation which the convening of Congress will renew.

In a very workmanlike way the publication above referred to goes about disposing of this false argument in the following manner:

There are no dyes which foreign textile manufacturers, including those of Germany, can secure which are not available to American factories under a license plan. If they are not made in the United States at *sufficiently reasonable terms and in commercial quantities*, they may be brought into the country under license from the Governmental agency charged with this duty.

The argument of fabric competition is merely an instance of "begging the question." It does not take into consideration the one vital fact that the dyestuff industry has been proved to be a national necessity and that restriction of imports for a limited number of years has been conclusively shown to be essential to the fostering of such an industry. All other considerations are minor ones and should be subordinated to the greater good.

The publication thus defending the licensing system was in a state of flourishing existence many, many years before it was ever thought that there would be an American dye industry, and its primary duty is to promote the welfare of the textile industries, which it ably serves. It would scarely undertake to lead its readers astray in a matter of this kind, nor could it be accused of prejudice in favor of the dye industry. These facts give added weight to its views on the licensing plan and render it doubly worth while to again

call the attention of the textile people to its published recognition of the truth that the battle of the dye indusry for effective protection should indeed be their own battle as well.

"ALL FOR ONE AND ONE FOR ALL"—HARDING

Speaking at a Republican rally a little more than a month ago, President-elect Warren G. Harding declared that "All for One and One for All" must be the motto of individual effort if the nation is to achieve its full potentialities.

"I want to see American life so knit together," he declared, "and every American so appreciative of the fact that the welfare of his fellow is his own welfare, that we will go forward to weave a humane pattern of united Americanism. . . . We are beginning to learn that we are not only in name and in desire a united people, but that we are so in fact. . . . It is impossible to pull one of the threads of that great fabric without starting the unraveling of the prosperity of all of us."

These are excellent sentiments, and they apply with particular force to the dye and textile industries. Indeed, those engaged in either are better able to realize what organized co-operation means in the way of mutual benefit than, perhaps, some others—certainly far better able than those who work in offices. We expect a great deal from Mr. Harding, and one of our principal hopes is that he will strive to bring home to the industrial population of the country a fuller realization of the necessity for the weaving of such a fabric.

Although he has not specifically mentioned the dye industry, our next President has stated clearly a general belief in protectionist doctrines. We believe, with others, that it is unfair to American workmen to ask our industries to compete with pauper European labor, and if his belief is carried

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out to the fullest extent in the case of the coal-tar chemical industries, here will be found one point, at least, concerning which he and President Wilson are in full accord.

The fact that the latter so far set aside his natural Democratic instincts as to twice recommend the strongest kind of protection for the dye industry in his messages to Congress ought to be sufficient proof that the question is not a political one. Moreover, Mr. Harding will have a safe majority of the Senate strongly with him and no longer bent upon a general program of obstruction. The country has at last been freed from the deadly chaos produced by party jealousy, and this should go far toward bringing about the results so eagerly hoped for during the past two years.

WEIGHTING AND DYEING OF SKEIN SILK

(*Continued from page 9.*)

formity such as the old-time dyer never dreamed of. As sold to-day, the solution generally stands at 140 deg. Tw. and contains about 24 per cent metallic tin.

The operation of weighting is carried out in lead-lined vats, jacketed, so that cold water may circulate so as to keep the temperature down to 60 deg. in summer. The direct addition of ice to the bath is not good practice, since melting ice gradually reduces the strength of the bath, which results in uneven weighting. The strength of the bath should be rigorously maintained at 54 deg. Tw.

The next bath is made by dissolving phosphate of soda in water until it stands at 11 deg. Tw.

The third bath is made by dissolving silicate of soda—"soluble glass"—in water, and should stand at 9 deg. Tw.

The tin bath and the phosphate of soda bath are run continuously as long as they are clean, up to strength, and do not show any signs of "breaking." The silicate bath, however, is used once to each batch of silk, and then run off, being made up fresh for each lot. Silk that has passed through a once-used silicate bath may show signs of chalkiness, a defect that cannot be corrected. For that reason, the silicate bath should be run off after each lot. Silk prepared for weighting is immersed in the tin bath, being hung on poles, given a few turns and allowed to remain in its solution one hour; the skeins are then lifted, whizzed and washed in soft water, and given a pass through the phosphate for half an hour, afterwards washed, whizzed and returned to the tin bath.

These operations are repeated alternately until the silk has been given the degree of weighting desired. When the determined number of passes have been accomplished, the skeins are worked for one hour in the silicate bath, thus forming on the fiber the chemical compound known as silicophosphate of tin.

With baths of the strength indicated above, three "passes" through the tin and phosphate and one through the silicate will give a weighting of 40 to 45 per cent above par, or, in technical language, "22 to 24 ounces."

Washing after weighting is equally as important as washing after boiling off. If any mineral acid remains in the silk from the "dynamite," it is likely to cause the formation of sodium chloride with some of the soda from the silicate. Sodium chloride is positively injurious to silk. On the other hand, if any traces of soap remain in the silk from the boiling off they will be decomposed when the silk enters the dynamite, liberating fatty acids which are likewise destructively detrimental to silk. From the foregoing, it is seen that the washings during the preliminary operations must be thoroughly done, and that the necessity for pure water for such operations is important.

Preparing silks to be dyed very light shades requires that the skeins should be bleached. Formerly the bleaching was effected by various processes, the most common of which was by burning sulphur in a detached chamber or "stove." The sulphur gas is a powerful chemical reducing agent. The inconvenience of this process, however,

led to the use of other bleaching processes, such as sodium sulphite and bisulphite. Solutions of these chemicals are decomposed by sulphuric acid and are quite effective, but sulphur bleaching as applied to silk does not produce a permanent bleach, as silk so treated gradually becomes yellow in time. It was not until the familiar peroxide bleach was introduced that real bleaching was accomplished.

Peroxide of hydrogen marked the beginning of modern silk bleaching. For 100 pounds of silk the bath is prepared with about 350 gallons of water and from 20 to 25 gallons of 10-volume peroxide of hydrogen added, and the solution made slightly alkaline by the addition of either borax or ammonia. The clean silk is now immersed and kept well under the surface by means of a wooden lattice; this prevents the silk from rising during the prolonged immersion. This tendency to rise is due to the disengagement of bubbles of oxygen. No metal should come in contact with the bleach bath except lead, which may be used for a steam inlet for the purpose of raising the temperature to about 115 deg. Fahr.

The time of bleaching may vary from eight hours to overnight, at the end of which time the silk is lifted, allowed to drain, well washed and dried, or passed on to the dyehouse. Peroxide of sodium has gradually replaced peroxide of hydrogen, except during the war, when the sodium compound was unobtainable. The method of bleaching with sodium peroxide is so well known that no reference to it is necessary.

Dyeing is the next logical operation, and is best carried out in copper or copper-lined dye tubs. The following classes of colors are used according to the general nature of the silk and the kind of fabrics the skeins are intended for. When ordinary fastness is required, acid colors are used. For bright and full shades that are not required to possess special fastness, the basic dyes are chiefly used. This same group of dyes is also much used for tin-weighted silks. For dyeings that are to be fast to water, ordinary washings and soaping as for sewing silks and effect threads, the direct dyes are principally used. For dyeings possessing the best possible fastness to washing, milling, boiling and acids, the sulphur colors are used; while the limited group of anthracene mordant colors, producing a range of medium and heavy shades, none of which are bright, lend themselves for coloring many fabrics of the best quality.—*Silk.*

IMITATION AMERICAN AND GERMAN DYES BEING OFFERED CHINESE, IT IS THOUGHT, BY JAPANESE DEALERS

U. S. Consul General A. W. Pontius, Mukden, China

A fair demand for aniline dyes exists throughout this consular district. According to the customs returns for the year 1919 the total amount of this class of dyes imported into China was valued at $1,229,556, and of this amount about $200,000 worth was disposed of in Manchuria. During prosperous years the annual consumption of aniline dyes in Manchuria exceeds $250,000.

Sources of Supply—Imitations

Prior to the war German dyes practically monopolized the China market. As the war cut off this source of supply, prices soon soared to a prohibitive figure, although there were stocks of considerable quantities.

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imported into China during the year 1919, over 50 per cent arrived from the United States and about 25 per cent from Japan, the remainder being of French and other origin. All pre-war stocks of the once popular-known dyes were early exhausted. Nevertheless, most of the dyes now offered for sale locally bear German labels, correct in every detail, and purport to be the products of specific German firms. These products sell at the old low pre-war prices—in some cases a trifle cheaper. There is also sold in the local market a popular line of cheap aniline dyes bearing an American label, giving the place of manufacture as New York City. These goods come in assorted colors, similarly packed and priced to the dyes bearing German labels. Inquiry made among the Chinese dealers shows that the stocks are obtained from Japanese firms in Mukden and Chinese wholesalers in Newchwang who deal exclusively in Japanese goods. Owing to the exceedingly low prices at which these dyes are offered for sale, it is only reasonable to suppose that they are imitations.

The dyes are put up in 8-ounce tins of various colors and shades, varying according to colors and prices as follows:

Colors	Small Coin Per Tin
Pink	$3.80
Maroon	2.40
Orange	1.80
Yellow	2.50
Green	2.10
Violet	2.10
Blue	2.10
Black	1.80

At the present rate of exchange $1 small coin is equal to about 40 cents United States currency.

German Crystalline Dyes

There are a few bottles of real German crystalline dyes to be found in some of the local Chinese stores put up in 2-ounce bottles, which sell for about five times that of the 8-ounce grades mentioned above. There is no question about the genuineness of these crystalline dyes, as they were purchased from German importers prior to the war.

Packing and Labeling—Credits

The dyes sold in the local market are put up in tins 5¾ inches by 2¾ inches by 2 inches in size, bear wrappers in colors similar to the dyes inclosed, and are packed in tin-lined or oil-paper-lined wooden cases strapped with iron, each case containing 100 tins.

The Japanese importers and Chinese wholesale dealers grant their customers 30 days' credit with the privilege of another 30 days' extension if desired.

Method of Extending American Dye Trade

American dye manufacturers desirous of extending the sale of their products in this market should appoint reliable local agents and keep them well supplied with stocks in order that they may make quick deliveries. Furthermore, these agents should be instructed to keep a close watch on imitations of marks and chops. Liberal credits must be granted to the local trade.

BRITAIN STANDS FIRMLY PLEDGED TO LICENSING SYSTEM FOR DYES

Further crystallization of authoritative opinion regarding the proposal of Great Britain to place the license system in force for the protection of her dye and other key industries is interestingly revealed by a declaration to the Manchester Color Users' Association by the president of the British Board of Trade to the effect that the British Government, viewing the dye industry as a military necessity, stood pledged to make it possible in future to import synthetic dyestuffs under license only. The chairman of the reconstruction committee of the association commented as follows:

"The reconstruction committee has been taking this matter up with the Government. There have been many discussions, and I now have the authority

to state that it is the settled opinion of the Government that for national security it is essential that synthetic-color factories should be in existence, should be maintained by a staff of chemists and other experts, and should be equal to those of any other possibly hostile nation. The Government is also firmly of opinion that this must be done without undue injury to color users and without placing the textile and other industries in a disadvantageous position.

"As color consumers we did all in our power to develop the dye industry of the country, but there are certain ways of establishing it. The Government has said definitely that the subsidy is unworkable, but it has come to the conclusion—and the president has given me permission to say so—that it is going to bring in a licensing and prohibition bill. I cannot give the text of the bill, but we have got to work the bill to the best of our ability, although it will mean that our constitution must be altered. Instead of being a voluntary body, as now, we shall have to form ourselves into a company limited by guarantee and capable of entering into obligations.

"Whatever legislation is brought in, it will firmly establish the dye industry of this country; but it is the bounden duty of all dye makers, after they get legislation, to help the association to do its bit. They must get the industry on a firm basis and stand on their own efficiency. Sir Robert Horne has asked me to meet other interested persons next week in order fully to discuss the type of machinery that will be necessary. The Government has already agreed in principle to certain schemes of research and has allocated £500,000, but I cannot say that it is specifically earmarked for the dye industry."

C. Rawson, chairman of the technical advisory committee, said that, under the reparation clauses of the peace treaty, the Allies had the option of taking 50 per cent of the stock of German colors existing in 1919, and Great Britain was entitled to 30 per cent of this 50 per cent. In December last the committee was informed that the German stocks amounted to 22,000 tons and comprised 13,000 items. Consequently, if the Allies exercised their option fully Great Britain should receive 3,300 tons. Up to the present the consignments did not account for more than 1,500 tons, and Mr. Rawson stated that it was doubtful if all that amount had actually been received.

In January last the advisory committee visited Germany and purchased 140 tons of dyestuffs at a value approximately of £192,000, and options were also secured on about 700 tons at an approximate value of £1,000,000, but the colors subject to option could only become available when the corresponding amount of reparation colors was released and delivered to the Allies. The option terminated on July 1. The amount of color received from Germany on this account up to the time of the meeting was about 220 tons, valued at approximately £345,000.

Some months ago, with a view to upholding the principle of collective purchasing of Germans dyes as the best policy for all concerned, the members of the committee, with the sanction of the firms and combines they represented, agreed among themselves to refrain from buying colors individually, either direct or through agents—a course which was, however, found to be impracticable, as German colors were

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coming into this country freely, and finally it was decided to rescind the agreement.

COLOR STANDARDIZATION AND MATCHING

Color standardization and matching the various tints and shades are very interesting to the well managed colored goods mill. It is not best for any mill to stick in a color any time to satisfy every whim. But there should be exceptions to this rule in special cases. In the first place a colored goods plant should standardize its colors. This means to have a nice line of blues, browns, greens, reds, etc. These lines will run from the lightest tints to the darker shades by well divided steps. A tint means a lighter color. A shade means a darker color. Not more than six of each line should be necessary. While only one each of lemon, orange, black, etc., should be necessary. The black should be a deep jet black. There are a great variety of blacks, such as brown blacks, blue blacks, etc. But a standardized black in a colored goods plant should be a rich, deep, lustrous black and always the same. The white should also be a standard faultless white—not dull nor brownish nor too bluish. A very slight bluish tint to the bleached yarn will, as a rule add to the white sheen desired.

Having standardized the colors, the next thing to do is to number them in this way: Each line of colors to be numbered from No. 1 up. That is, the six different blues will be numbered one to six and the browns one to six, etc. This makes it easy for all to remember, and those persons who follow up the work soon become accustomed to the system. When No. 5 blue is mentioned, all who are familiar with the system known at once which tint or shade of blue is meant and what it is. The next thing to do is to have a system of holding all yarns to the shade or tint wanted. The best system in vogue is to have several sets of filling-wound bobbins of each color, and all to be kept in a closed case. As the exposed part of the bobbin may age or fade somewhat, a little yarn can be unwound once in a great while to freshen the exposed surface of the colored yarn.

Thse several sets will be distributed, one set to each department, as follows: To the designers, dryer, beaming and quilling department—also to the filling stock room, weaving department, to the general office and to the selling house styler. This keeps everybody lined up to the standard color scheme of the mill and everyone works together. The dyer must not deliver yarn which does not match the color wanted. The department receiving the yarn must not accept any lot of yarn which does not match the shade wanted. This must be the rule all through the mill. The best way is to have a certain hour each day when the superintendent and his assistants may pass on the various lots of yarn, and rejecting such lots as must be retreated or retouched. If a color is too dark for the shade, it cannot be tinted or lightened, but it can be darkened and stepped down to the next shade or number on the list. Thus No. 1 blue could be darkened and reduced to No. 2 blue, etc. After reaching the darker shades, if yarn is offshaded it can always be put into or dyed black. So it is well to have a low stock of black on hand, as black is apt to be called upon to reclaim offshade lots.

Another very important matter is to always pass upon or match the colors in the same light. Artificial lamps are now available for the express purpose of matching colors. The variations of daylight are no longer considered reliable. It is a fact that colors passed as matched in a dull daylight may not match at all in a bright daylight. Also the matching should always be done in the same manner, i. e., by holding the yarn to be matched at the same distance away and at the same angle to the light. The importance of this cannot be emphasized too strongly—*Canadian Textile Journal.*

J. H. NEUMAN, OF NATIONAL, HEADS IONIC SPECIAL PRODUCTS

J. H. Neuman, for fifteen years in charge of the essential oil department of the Chicago branch of the National Aniline & Chemical Company, Inc., has entered business under the firm name of the Ionic Special Products Company, Chicago. Mr. Neuman is also vice-president and treasurer of the Keystone Aniline & Chemical Company, Chicago. In each of these companies Mr. Neuman is associated with James W. Peck, who was formerly general manager of the Chicago branch of the National Aniline & Chemical Company, Inc.

DICKS, DAVID MERGES WITH DICKS, DAVID & HELLER

The filing of articles of incorporation at Albany, N. Y., recently by the Dicks, David Company, Varick and North Moore Streets, New York City, manufacturers of dyestuffs and chemicals, initiated the consolidation of this firm with the Dicks, David & Heller Company, Chicago Heights, Ill., having a working capital of $550,000.

The latter company was organized in 1917 by the Dicks, David Company when it acquired the controlling interest in the property of B. Heller & Co., also manufacturers of dyestuffs. During the same year the company moved its factory from Rosebank, Staten Island, to Chicago Heights, which plant since then has been the center of its manufacturing operations. It has constantly added to its line of colors and enlarged the plant.

The purchase of the entire interests of the Hellers in the Chicago Heights plant last September was followed closely by the incorporation of the firm. This consolidation is said to make the company one of the largest producers of basic colors in this country.

Another recent purchase of the Dicks, David Company was the corner building at Varick and North Moore Streets, a plot of 80 x 75, where it has located its main offices, laboratories and shipping department. The company has branches in Chicago, Paterson, N. J., Glens Falls, N. Y., and San Francisco, besides the two already mentioned.

Albert David is president, Robert T. Dicks treasurer and A. B. Johnson sales manager of the firm. The incorporators are: Murray Taylor, Paul P. Barringer, Jr., and George Brooks.

FROM OUR BRITISH COUSINS

THE AMERICAN DYESTUFF REPORTER.—This excellent trade paper is now publishing a monthly technical supplement. Prof. Louis A. Olney, of the Lowell Textile School, is the editor. The second issue, that of September, contains some sound articles.—*Dyer & Calico Printer*

NEW DYEING AND FINISHING PLANT FOR GOLD MARK KNITTING CO.

The new dyeing and finishing plant of the Gold Mark Knitting Company, Woonsocket, R. I., is approaching completion and will be ready for business, it is thought, by January 1. The building, which is 190 x 80 feet, is located on River Street, and when completed and equipped will be "the last word" for a dyehouse and finishing plant. About 100 hands will be employed. In addition to taking care of its own large business in the way of dyeing and finishing, the plant will do work for the general trade.

S. R. David & Co., Inc.
252 Congress St., Boston, Mass.
Dyestuffs
and
Chemicals
Factory:
Dye Products & Chemical Co., Inc.
Newark, N. J.
New England Representatives:
Lamie Chemical Co.
New Haven Office: 944 Chapel St.

FRANKLIN PROCESS CO. IS BUILDING DYEHOUSE

The Franklin Process Company, 291 Promenade Street, Providence, R. I., which recently purchased the property of the Gorham Manufacturing Company, on the corner of Eddy Street and Allens Avenue, is building thereon a large dyehouse for the job-dyeing business of the company. The building will be approximately 180 x 180 feet, two stories, of concrete and brick modern construction, and when completed will be a model dye plant. The building is being erected by John R. Bickford, contractor, under the supervision of Lockewood, Greene & Co., of Boston. It is expected the plant will be ready for the installation of machinery before the first of the year.

NOTES OF THE TRADE

Under the laws of Delaware, the Cellulose Silk Company of America has been incorporated. The capital is $2,500,000, and the incorporators are M. M. Lucey, M. Butler and L. S. Dorsey, Wilmington.

To deal in chemicals and dyestuffs, the Ansonia Products Company has been incorporated under the laws of New York with a capital of $10,000. The incorporators consist of F. C. Wessel, C. L. Hugle and M. Smith, 65 West Ninety-fifth Street, Manhattan.

The Laureck Soap Manufacturing Company, Inc., of Philadelphia, textile soap manufacturers, have removed to larger quarters at Howard, Hope and Palmer Streets, that city.

H. Gardner McKerrow, of the National Aniline & Chemical Company, has departed for the West Indies, where he will spend a three weeks' vacation. Mr. McKerrow will visit the Windward Islands.

According to press reports, the four mills of the American Woolen Company at Lawrence, Mass., will today go on a four-day-a-week schedule until further notice. They have been operating six days, but, according to agents, with only about 50 per cent of their personnel. Lack of orders is given as the reason for the curtailment.

Announcement has been made by the Steinen Dyeing Company, New York City, to the effect that this firm has increased its capital from $25,000 to $75,000.

To manufacture dyes and chemicals, G. B. Palmer & Co. has been incorporated under the laws of New York. Headquarters will be in Brooklyn and the capital is $210,000. The principal incorporator is G. B. Palmer, 14 Garden Place, Brooklyn.

F. E. Atteaux & Co., dyes and chemicals, have been granted permission to erect a two-story and basement building on a site in Broad Street near First Street at Gloversville, N. Y. The building will be of brick construction and modern throughout. Construction work will begin as soon as the contract has been awarded.

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THERE are in America, in the textile, paper, leather and allied industries, 67,585 separate establishments dependent, directly or indirectly, upon regular and uninterrupted supplies of dyestuffs.

In these factories, which represent an investment of four billion dollars, over two million people are employed. They produce annually in manufactured goods nearly six billions of dollars or 25% of the country's total output of manufactured products.

American dyestuff manufacturers are straining every effort to keep these thousands of factories running, these millions of workers employed and the flow of manufactured products unbroken. For these efforts to be successful however, American manufacturers, American workers and American consumers must themselves provide the means of safeguarding this industry in such a way that its permanence, stability and continuous development is assured.

E. I. du Pont de Nemours & Company, Inc.
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